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ABSTRACT

Metakinesics, a gesture used to describe another gesture, was examined in four judges discussing videotapes of 12 children listening to a story teller. The analysis of the data was divided into four parts: (1) comparing the judges' metakinesics among themselves, (2) comparing the judges' kinesics in taped and untaped situations, (3) comparing judges' kinesic behaviors with their metakinesic behaviors, and (4) analyzing in detail the interpreting functions of one of the judges. What emerged from the analysis of the data was a process of metakinesics programing that was similar to that in Eugene Nida's ethnolinguistic model of translation. It appeared that the image of the kinesic behavior of the model (storyteller) was mediated through the general kinesic behavior of the interpreter (judge) before it was produced metakinesically. The mediation process involved the interpreter's rules of ethnokinesis, the interactional situation of the moment, and possible constraints of seating arrangements or physical objects on the interpreter. (RL)

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METAKINESIC BEHAVIOR IN THE DESCRIPTION OF NON-VERBAL BEHAVIOR

(Illustrations by Patricia Bolton)

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Introduction

If little research has been done on the use of metalanguage, the possibility of research in metakinesics has not even been mentioned anywhere in the literature that we have consulted.

Traditionally, research in non-verbal behavior has been confined to the analysis of face-to-face interaction. This and a previous study on the paraphrasing of gestures (von Raffler-Engel 1977) are intended as an attempt to open up a new field within the area of non-verbal research, namely the study of non-interactional kinesics.

With the exception of the above paper on paraphrasing, there is no documentation to date neither on the use of gestures in paraphrasing nor on the gestural behavior of a speaker-gesticulator in the act of describing a gesture he has previously observed as a hearer-seer. A first attempt to describe the gestural behavior in translation is forthcoming (von Raffler-Engel and Buckner, 1978).

This type of research aims at discovering to what extent, if any, the gestural behavior of a speaker influences that of a hearer when the latter recalls a speech act by the former for the purpose of talking about it in his own language or translating it into another. For lack of a better term the listener-viewer who paraphrases or translates will be called the interpreter and the speaker-signaler(s) whose message he interprets will be called the model.

The methods and units of measurement for this type of analysis are quite similar to those established for inter-actional kinesics but the focus in this new type of study is on the intra-personal reaction rather than on inter-personal relations.

Three terms have been introduced so far, metakinesics, non-interactional kinesics, and intra-personal kinesics. Each will have to be clarified.

Of the three, metakinesics appears to be the easiest to define. It is similar but not analogous to matalanguage. In its simplest meaning, it is a gesture used to describe another gesture. But this ideal situation happens rarely, if ever. In most instances gestures are described by a combination of meta-gestures and language. The language used to describe a gesture cannot properly be termed metakinesic, especially when a gesture is described verbally with little or no

gestural behavior to supplement the verbal information. It is not quite metalanguage either because it does describe a gesture rather than a verbalization. Some linguists and philosophers might possibly agree with a definition of metalanguage meaning really meta-communication, thus including the direct description of any communicative behavior. Such an extension of meaning, however, would make the whole term metalanguage vacuous. It would blur the dividing line between what is now properly called metalanguage and a common language summary of what somebody has said. The term metakinesics has to be restricted to a gesture used to depict another gesture even when the gestural configuration is only partial.

In parallel fashion, the term metalanguage has to be restricted to language about language exclusive of reference to gestural communication. All terms are convention and can be properly used once the convention has been agreed upon. One could propose a term metakino-language to cover the description of the combined verbal and gestural communicative entity.

The term non-interactional is considerably more complex. On the surface it looks like the contradictory of interactional. In reality the terms are opposites. Opposition implies reciprocity. Interactional and non-interactional may even be conversives. Eventually, however, the two terms may be semantically in a much more complex relationship, interactional being on the social level while non-interactional is on the psychological level. The two terms would, therefore, not share the same domain.

It may be best to start by defining interactional. In the context of language it implies a speaker-hearer relationship. In the most common meaning of the term, this relationship is in a conversational setting where each participant is a speaker as well as a hearer. In less frequent instances, the term also applies to the lecture type interaction, where one participant or a panel of participants acts as speaker and all other are hearers only, at least until a question and answer period ensues. In the lecture setting, some linguists and psychologists would see interactional communication only on the part of the speaker. The audience, having only a listening function, is sometimes considered non-interactional by linguists and psychologists. Kinesicists generally consider both parties interactional. In the lecture as well as the conversational situation the speaker looks for cues from the audience while he is trying to present his material as successfully as possible. The audience provides the cues by head nods, applause, or staring into the void, and dozing off.

The only non-interactional linguistic activity may consist in the use of language to clarify one's ideas. People gesticulate with and without company albeit in a different manner. Ekman (Ekman and Friesen 1972) states that when the individual is alone rather than in society his use of illustrators decreases while there is a sharp raise in the frequency of adaptors.

The focus of the new type of research in metakinesics is not on the comparison of the individual when alone and in the social setting. It is on the process of understanding and reproducing perceived non-verbal behavior. This is why it was termed intra-personal.

Interaction does obtain between the model and the interpreter but it is a very one-sided non-reciprocal interaction where the model is no more than a passive influence. This, of course, is fully so when the model is not live but on a television screen. Interaction also obtains between the interpreter and his audience, live or imagined, for whom he interprets. Ultimately, it is difficult, if not downright impossible, to neatly separate what is due to influence of the model and what is due to the effort to make the model clear to the audience. To accomplish that intricate task necessitates an extremely large sample of data. Such research can only be done with government funding.

In conclusion, one can not truly speak of non-interactional kinesics but one can decide to concentrate research efforts on the non-interactional process of the perception and production of gestures as an intra-personal manifestation.

This would imply that the new field of research is within psycholinguistics rather than sociolinguistics. A division between the psychological and the sociological component of language use reflects the focus of the analysis and not the reality of human behavior where the two are entertwined (von Raffler-Engel 1964). Every interpreter is the product of his culture, his biological personality, and his past experience.

A certain amount of documentation is available on cultural differences from research in verbal language and physical culture. How far these findings can be transferred to kinesics is still to be fully investigated. Although not as fully researched as verbal language, there is a growing number of publications on socio-kinesics, a term coined in 1975 for cultural variation in gestural behavior (von-Raffler-Engel 1976). The pioneering work in gestures and culture dates from 1942 (Efron 1972). The fact that personality plays a key role in kinesic behavior

has been well documented by more recent research (Cohen and Harrison 1972, Buckner 1977).

From what has transpired from the limited studies in metakinesics conducted so far it appears that the same holds true for the interpreting function. The study on translating (von Raffler-Engel and Buckner 1977) shows that interpreters from high kinesic cultures, such as Spaniards and South-Americans, will notice far more gestures and more details in a foreign model than will persons from low kinesic cultures, such as Germans. How personality differences and cultural backgrounds interact in kinesic perception is, again, very difficult to measure. The exceptancy is culturally conditioned and the degree of sensitivity is likely to be a personality factor. On the expressive level, every individual within his language-and-culture seems to have his own idiokinolect. The latter is liable to affect his perception of the model and will most certainly influence his metakinesics.

The research project which will be presented in this paper eventually shows also the influences on the interpreter of his inter-personal relationship with the audience to which he interprets, not to mention the physical setting and the degree of formality of the situation. Two factors entered into the inter-personal relationship, the interpreter's relation with the model, on the one hand and his relation with the audience, on the other.

Research Design

The data utilized in the present research were taken from data which had been previously gathered by the senior author for another study (von Raffler-Engel 1977). They consist of nine brief video tape clips of a total of 12 Black American children between the ages of five and fifteen years listening to a story teller. The story teller is Mrs. Brenda Hopson-Hasham, a female Black American who was a graduate student at the time. Mrs. Hopson-Hasham is also responsible for finding the thirty children which were originally videotaped for the previously mentioned study and has utilized the corpus for research of her own (Hopson-Hasham 1977). For this research presented in this paper the clips were arranged sequentially from the youngest to the oldest group of children, and alternating males and females. These clips were subsequently shown to a panel of four judges: a psychiatrist, a pediatrician, a school principal, and a linguist. Three judges are Black males and one judge, the linguist who is also the senior author of this article, is white and female. After viewing the clips the judges were asked to comment on the

non-verbal behavior of the children and their comments were videotaped. Following the official comment, an informal conversation was videotaped during which the judges thought that they were not recorded on tape.

We then proceeded to the analysis by matching the comments of each of the judges with the behavior of the model it referred to.

The judges were purposely selected to be all Black Americans because the children and the story teller were all Black. This allowed for in-group judgement which is more perceptive in kinesics than out-group judgment (French 1977). The white person on the panel who is the senior author of this article acted as a moderator becuase of her familiarity with the research project from its inception in 1975.

Technical Equipment

The analysis of data was carried out on a video-cassette editing system. The system was made up of 2 Sony VO 8000 units connected through a master convergence editor. The added capabilities this system had over normal editing equipment was that it enabled the operator to preview chosen edits, to make automatic cues of the tape, and to operate the tapes in forward or reverse motion at variable speeds and with varied viewing capability. The variable speech viewing allowed us the advantage of being able to pick out abrupt gesticulations easily and to make various gesticulation measurements of the subject. Therefore, it was very convenient with this system to do a fairly involved analysis with greater precision of the movements and motions of the subjects.

The basic analysis was done with a variety of editing techniques. These included using frozen, repeated, elapsed time sequences and variable speed images of certain kinesic movements. One technique used for timing other than the normal stop-watch method was the counting of pulses from the sync-trac. This was done without expensive timing equipment. By viewing the movement at a variable speed, it was then possible to see and count the frame pulse signal. There are 60 frame pulses per second. This technique afforded far greater accuracy than normal stop-watch calculations without the great expense of timing equipment. It is, however, too tedious to do long time sequences this way, but then the inaccuracy of stop-watch timing is not so crucial in these longer sequences.

With these techniques analysis was definitely easier and, therefore, we feel gave us the ability to do a far deeper analysis than would have been possible with other equipment.

Analysis

Before deciding on the proper research design we viewed the matched clips in a very general manner. When one goes into a new field of research, the first problem that presents itself is that one does not even have a clear notion of the variables involved, not to speak of the interrelationships among those variables.

Our first task was to list the variables. Repeated, patient viewing of the tapes produced a list of variables, a list of research problems, and a list of alternate research designs.

The analysis of the data was divided into four parts:

(1) Comparison of the judge's metakinesics among themselves;
(2) Comparison of the judge's kinesics in the taped and the untaped situation;
(3) Comparison of the judge's kinesic behavior with their metakinesics;
(4) Detailed analysis of the interpreting function by one of the four judges.

(1-2) The comparison of the judges among themselves revealed marked personality differences. The psychiatrist who is presently commissioner of Mental Health for the State of Tennessee, and the school principal were very quiet kinesically and even more quiet during the formal taped session while the pediatrician, who is also professor at Meharry Medical College, and the linguist, who is a professor at Vanderbilt University, were kinesically active in both the formal and the informal settings. There was greater difference of postural and other body behavior between the two contrastive settings on the part of the two kinesically quiet judges than on the part of the kinesically active judges. The kinesically active judges described more specific gestures of the models while the kinesically more quiet judges discussed pertinent comments at greater length.

Sex differences did not show up in the inter-personal relationship among the judges during their conversational interaction, but seemed strongly marked concerning the inter-personal relationship between the judges-interpreters and the models. Same-sex interpreters were more likely to copy the body movement of the model to full extent than were other sex-interpreters. For eighteen times in the nine model clips the story teller refers to a <u>big earring</u> and brings her hand to her ear in a wide arm movement.

In several of the eighteen instances the model moves her hand back and forth from her ear. Once the model even removes her own earring, holds it in her hand, brings the hand forward to the height of her chest before clipping the earring back on her

ear. The earring movement does not only occur eighteen times, it is also repeated several times in many of these occasions. Once Brenda actually detaches her earring, holds it with the tips of her fingers so that it is visible on all sides, and then moves her arm and hand to show it to the right and to the left so that the two little children (Tobin and Treg) who sit on her side on the sofa can see it. We analysed all the earring movements:

Occasion 1 — 2 repeated touching movements with one hand
" 2 — 2 " " " " " "
" 3 — 1 touching movement with both hands, followed by
2 touching movements with one hand
" 4 — 1 touching movement " " "
" 5 — 1 " " " " "
" 6 — 1 " " " " "
" 7 — Verbal mention without movement
" 8 — No Verbal mention but
1 movement occurs where one hand is held over an extended period on the earlobe
1 movement with one hand follows by which she removes the earring and shows it to the right and to the left.
1 movement then by which she clips the earring back on.
" 9 — 1 touching movement with one hand, followed by
3 back and forth movements of the hand pointing to the earring.
" 10 — 1 movement without touching
" 11 — The earring is verbally mentioned without movement
" 12 — 1 pointing to the ear (like on occasion 9) but no full movement of the usual type.
" 13 — 1 touching movement, but no verbal mention
" 14 — 1 " " , followed by
2 pointings
" 15 — 3 "
" 16 — 3 " , but no verbal mention
Occasion 17 — 1 pointing. Instead of the word "earring" the word "barrel" is used which in the story is equivalent.
" 18 — 1 pointing movement, with word "barrel".

This highly visible gesture is mentioned by the female interpreter who replicates the gesture touching her own earring. During the informal setting the female

interpreter refers to Brenda's illustrators in general and while uttering the word illustrators she gesticulates in the same manner of Brenda reaching for her earring in the story.

The one only male interpreter who mentions the big earring cups his hand over his full ear rather than over the lobe only. It is possible that men feel somewhat akward in touching, or near touching, their earlobe as if they were wearing an earring. It is also possible that women, because they do wear them, are more aware of earrings than men who do not wear such adornments. Men may perceive and/or recall the physical ear more vividly than the earring. There may be similarities in this type of model-interpreter relationship and the cultural exceptancy observed in the translation experiment (von-Raffler-Engel and Buckner 1978).

Another possible explanation of the more precise interpretation which obtained when the model and the interpreter were of the same sex than when they were of the other sex suggests the presence of taboo. One model, a teenage girl, plays with her hair almost throughout the whole period she is on tape. The male interpreter refers to her gently playing with her hair, replicates her adaptor, but without actually touching his hair.

It appeared that an interpreter identifies more closely with a same-sex rather than an other-sex model. We did not take time for precise measurements but both of us were in consistent agreement that the pediatrician had a more forceful involvement when copying a boy's gesture than when referring to a girl. The opposite was true for the female interpreter. She made two mentions of the contrasting behavior of boys and girls, once in the formal conversation period and once in the informal period which followed the official taping. Her metakinesic movements were barely perceptible when she talked about the boys but were strongly pronounced when she said that "The girls are more conscious of the social situation. They sit more straight." During the informal conversation she tells the other panelists that at the completion of the taping the boys tended to run all over the television studio while the girls were primarily interested in inspecting the sofa on which they had been sitting during the story telling sessions. Running around, obviously, involves more motion than inspecting a sofa, but when looking at the female interpreter one would have thought that the girls were the ones doing the greater physical exertion.

(3) The comparison of an interpreter's general kinesic behavior with his metakinesic behavior is extremely important in order to determine to what extent, if any, his gesture is imitative of the model. The ideal condition for such a com-

parison obtains when an interpreter talks freely about a certain gesture and also produces it as against when he talks and produces the same or similar gesture of a model. Imitation of a gesture can be full or partial. There may be a phenomenon of kinesic interference from the model to the interpreter which may parallel verbal interferences in foreign languages.

Our data are insufficient for a discussion of this area. From the present pilot study we learned that the research design for the final project has to incorporate kinesic instances compatible with the metakinesic occurrences by careful and unobtrusive elicitation.

We did, however, find compatible kinesic and metakinesic movements qua movement. There were numerous instances, for example, when an interpreter (the pediatrician) turned his head during the general flow of conversation and four instances in which the same interpreter turned his head when talking about a similar body movement of the model. We clearly detected a difference in the various model-related (metakinesic) head turns and in the model-free (kinesic) head turns of the interpreter.

Instance I

During the informal conversation following the officially taped session the pediatrician says: "You figure they are micro minaturizing everything. Look at this multifaceted calculator."

He turns his head towards the upper pocket of his lab coat from which he lifts a small calculator. His eyes are down on the pocket and no attempt is made to show the eyes. The head movement is very rapid and unobtrusive.

This behavior is in marked contrast with the same subject's metakinesic head turns who seemed to be done in a manner to be noticed. This impression is extremely difficult to describe analytically. For the time being, we will simply make a subjective statement. We did not seek independent judges this time. Eventually, we plan to arrive at measurements and scales to document our impressions. We do, however, feel that our impressions are legitimate tools of analysis. To quote Nierenberg and Calero (1971): Gesticulation "is a human process and the methods that men have intuitively used for hunderds of thousands of years to understand one another naturally lend themselves as techniques for understanding gestures."

Instance II

Repeatedly, during the conversation the pediatrician moved his head to adjust it with the rest of his body when he shifted to a more comfortable seating position. He did this mostly when listening but also sometimes when speaking.

In the listening situation his body is kinesically quiet except for moving his head initially towards the particular conversation partner who does the talking. There are frequent nods of agreement with the head, but the hands are still. In no instance did he look the same as during the four metakinesic head turns which will be described later.

When talking himself, he grows gradually more animate and his hands are almost constantly moving. He holds a pencil in one hand but does not appear to use it as an object-adaptor. His animation reaches a peak when he needs a more forceful behavior to stress a particular point. For example, at a certain point he mentions the word athletic and starts moving his feet. He laughs forcefully and moves his shoulders when talking about the comicity of the fantastic stories that were told to the children on the clips he had just watched. When talking about male chauvinism that has to be overcome he extends his hand at a right angle to his body and with a steady rhythm moves it straight in a semi-circle giving an impression of "equalizing".

His body movements are most evident when he is engaged in metakinesic behavior while mentioning a model's gesticulation.

Instance III

During the formal taping the use of adaptors is extremely limited. As soon as the informal conversation begins he has a light cough and fixes his eye glasses. He then touches his moustache. This type of adaptive behavior is markedly different from the metakinesic gesture of playing with one's hair which will be described later and which has to be considered as an illustrator rather than an adaptor provided that metakinesically the distinction still remains valid. In group behavior the distinction is valid and clearly evident in kinesic synchrony (von Raffler-Engel 1974). The relationship between metakinesics and kinesic synchrony remains to be researched.

(4) For the detailed analysis of one person's metakinesics the pediatrician was the obvious choice. He was kinesically active in the taped as well as the non-taped situation and in his comments made frequent references to distinct body movements of the children and the story teller.

Upon deciding that we wanted to investigate the metakinesic behavior of one single interpreter, we viewed the tape without talking to each other. At the end of the viewing we had formed exactly the same opinion, albeit an impressionistic opinion.

We therefore decided to verify our impression by comparing the ratio of kinesics to verbalization for each of the three Black participants during the formal session. We timed all panelists while they were talking in view of the camera. We did not time them when they were not visible on the screen. If we had timed them continuously we would have periods of speech for which we would have no image and our selection was as random as any and could therefore have no biasing effect on the data. The speaking time for each panelist turned out to be approximately the same. The commissioner spoke 421 seconds, the school principal 467 seconds, and the pediatrician 441 seconds.

When we tried to isolate kinesic frames we found that the task was an impossible one within the available time. It was impossible to count illustrators because in many pictures the hands were not visible. Counting head movements would have been extremely elaborate. Being concerned only with speaking instances from among the regulators, we would have to exclude all back channel nods. The real problem is that expressive body movement is not only quantitative, it is also qualitative. We opted for the latter and it became apparent that the head movements of the three panelists could be distinguished into two types, those of the commissioner and the principal which started at the neck and during which the shoulders were in a firm position, and those of the pediatrician which started from the shoulder and whose head movements seemed to be part of a total body involvement. His own high kinesic personality made the pediatrician more aware of the kinesic motions of the models and may explain why he was the only one who provided us with clearly definable instances of metakinesics. The other two panelists did not even mention the story teller's earring. Our distinction between high and low kinesic personalities applies primarily to individual differences in the perception of body motions. The storage and recall of the kinesic image is in many ways similar to the process for symbolic habits and skills described by Paivio (1971: p. 5/5-510). Paivio quotes Kuhlman's (1960) distinction between high and low imagers depending on personality factors. Shapiro (1968) showed that "some people do have a predilection for observing facial cues while others consistently choose to respond to linguistic cues" (reported in Knapp 1972: p. 126). Our findings support this and eventually isolate three distinct variables, culture, personality, and profession, for the purpose of further investigation.

It is difficult to decide to what extent his profession influences a man and to what extent his personality made him choose a certain profession to begin with.

Of the three panelists, the commissioner who is an administrator talked primarily about the theoretical issues which could be deduced from what he saw on the story telling tape. The principal emphasized the practical applications that can derive from the knowledge gained from the viewing of these tapes. Particular instances he recalled most vividly and most accurately were verbal, a child (Treg) saying "ho, ho, ho" when Brenda mentioned a giant; and a boy (Hezekiah) commenting that "It must have been an earthquake" when Brenda spoke of a mountain that moved. He repeated the exact utterance of each child with its original intonation contour. From among the kinesic movements he had just viewed on the tape he focused on eye contact and its implications for the student-teacher relationship. The pediatrician looked at the bodies of the children which is, after all, what he does professionally all the time. He is the only one that describes a series of particular motions and who is metakinesically active.

Having isolated the pediatrician for our case study, we proceeded to match his behavior with that of the children. We thus established sets of interpreter-model correspondences. These matchings were categorized into types depending on the degree of observable similarity between the motion of the model and that of the interpreter. In this vein, all identical or near-identical movements, such as a hand motion signalling the closing of a book, were classified together under the same type. Each type was subsequently subdivided into its subtypes. Subtypes of the "identical movement type," for example, would be all movements that exhibit such a close degree of observable similarity, such as the closing of the book and the mention of an earring while touching one's ear. For each subtype the actual token occurrences were listed, each under the accompanying verbal statement by which the interpreter made reference to the model.

The types are listed from the most iconic to the least iconic. This is the equivalent of saying that they are listed according to the increasing amount of symbolicity.

It will be observed that the verbal statements of the tokens of each subtype are markedly similar. In the first stage of the grouping process we started from the verbal statement rather than from the body motion. The verbal utterances are clearly audible and are certainly easier to classify than the kinesic and metakinesic movements. Eventually we concentrated on the gestures. In the final matching stage we never found any contradiction between the verbal and the kinesic or metakinesic message in our corpus.

We did not distingush between illustrators, emblems, affect displays, regulators and adaptors. This is the first time in a research project organized by the senior author where, to her great surprise, Ekman's (Ekman and Friesen 1972) distinctions did not prove relevant for the purposes of the analysis. The self-adaptor of touching one's hair was classified together with the metakinesic representation of closing a book. Metakinesically the latter can be classified as an illustrator but kinesically the original gesture was not an illustrator. This raises a very complicated question of the classification of kinesics versus metakinesics. Interestingly, the degree of consciousness of the kinesic movement is on another level of consciousness of the metakinesic movement. Level of consciousness does not transfer, only the physical image. This subject will be left for a specialized paper. Eventually, we plan to gather a corpus with just this problem in mind. (For a general treatment of the problem of consciousness in kinesics see von Raffler-Engel. in press).

Type A

Subtype a Closing of the book

Token I

Pediatrician: "She (Brenda) had the book in front of her. She closed it and asked him (Calvin).

The model Brenda closes the book with her left hand, which is the general pattern. The pediatrician makes a motion with his right hand as if he were closing a book. He happens to have a pencil in his left hand and also is engaged in gesticulating with this hand in his usual manner. Except for the difference in right and left hand and for the presence of a real book, the motions look the same. There is, however, a marked difference in the speed of the movement. The pediatrician's imaginary closing lasted 0.09 seconds and Brenda's real closing of the book lasted 0.19 seconds. The ratio is 2:1 in favor of the metakinesic movement. Given the identical kinesic contour of the kinesic and the metakinesic movement we are convinced that the closing of the book was not simply an illustrator on the part of the pediatrician. One does not necessarily accompany it with a gesture when one talks about closing a book. The term kinesic contour was coined to parallel the common term intonation contour. It covers the relationship of the parts to the whole within a given direction. It is this parallelism of relationship which gives the impression of sameness to the viewer. The word model applies very aptly in metakinesic representation. A model does not have to be on the same scale but it must feature the same proportions. Broadly speaking, the proportioned elements

within a kinesic configuration are the three components listed by Knapp (1972: p. 92): intensity (the degree of muscular tension involved in forming a movement pattern), duration (the length of time involved in a movement), and range (the extent of the movement) and which were first identified by Birdwhistell (1970).

To these have to be added further dimensions, such as number of false starts, repetitive movements within the same configuration (like up and down motions of the fingers), and others. In this paper we do not intend to go into these finer details. We only wanted to present the concept of kinesic contour which is basic to the description of metakinesics.

Brenda closes a large book very casually and slowly. The pediatrician closes a small book very rapidly in conformity with the rapid movements of his body and the articulation of his speech. This is an extremely interesting case. The general animation of the interpreter reflects the body language of the child Calvin about whom he is talking all along and about whom he will continue talking after the parenthesis about the story teller. The interpreter copies a new model within the context of the old model, arriving at a compromise. By reducing the size of the book he can produce the same motion in less time without in any way jeopardizing its symbolic parallelism.

Subtype b Hand to mouth

Token I (see illustration at end of article)

Pediatrician: "He (Calvin) listens to her telling about eating the story."

The model Brenda says: "They grab it out of the air and say: 'Take this one and swallow it.' And she said 'that was a Jahdu story she just swallowed.'"

While telling about eating the story the pediatrician lifts his right hand towards his mouth but suddenly stops without touching his mouth. The other-sex model had made a much broader arm movement and with her right hand actually touched her mouth.

Subtype C Hair touching

Token I (see illustration at end of article)

Pediatrician: "one of them (teenage girl) gently playing with her hair."

The teenage girl model is seated on a sofa and while listening to the story teller continuously softly strokes her hair with her left hand. She has another girl sitting on her left side and nobody to her right.

The pediatrician sits on a chair and uses his right hand which he curls in an

identical cupped position lifting it in a similar motion close to the body, opens and closes the hand slightly like the girl in her stroking motion; but he does not actually touch his hair, or even the slightly lower point where the girl's hair comes down.

Subtype d The earring

Token I (see illustration at end of article)

Pediatrician: "She (Brenda) increased her gesticulation with them. She talked about the big earrings. She moved her hand."

The pediatrician lifts his right arm sidewise and upwards, cups his hand around his ear while the model Brenda always brings her hand to the earring she wears and never covers her full ear. There are eighteen instances of the story teller touching her earring and it is, of course, impossible to know to which one the interpreter refers or whether he has a global impression of all these instances in which the single occurrences can no longer be separated.

Type B (Strongly similar)

Subtype a Eye gaze

Token I

Pediatrician: "And particularly one boy (Hezekiah) who did not appear to be attentive. Yet he was. He, as soon as she mentioned a point that seemed to meet his fancy, he immediately returned the head, direct eye contact with her."

In the beginning his hands move in the customary manner unrelated to the model. When he mentions the eye contact, he turns his head softly at about twenty degrees, with the same type of motion of the model. He also opens his eyes wider by slightly lifting his eyelids. The child from a forward looking position turned his head sidewise to meet the eyes of the story teller. The pediatrician originally had his head turned towards his conversation partner on the right. He now turns it to the front. The effect of the metakinesic movements is the same of the kinesic movement, although the direction is not the same. What seems to be pertinent is the presence of a head movement of twenty degrees.

At the same time that the pediatrician moves his head he also lifts his right arm in a swinging motion to the side as if to indicate the direction of the model's eye gaze. The model's arms were still at the time.

This boy was seated on a sofa in a slumped posture, knees spread apart, torso leaning forward, and back slightly curved. The pediatrician was seated erect on a chair, but when he mentions this model he changes posture, puts his head and torso slightly backward in a more relaxed posture.

Token II

Pediatrician: "One girl (Lisa) ...staring directly at the reader, at the story teller without really responding to the story."

The model's head is in the direction of the story teller, but she seems to gaze rather than really look at the story teller. The pediatrician looks at his conversation partner to the right. When telling about staring at the story teller he abruptly turns his head to the front without lifting his eyelids.

Token III

Pediatrician: "Another one (teenage girl sitting on a chair) staring at the teacher, but again not seeming to respond to the story."

When he says staring at the teacher the pediatrician turns his head about twenty-five degrees in a tilted position. The model had not been moving her head at all. It was Brenda, the story teller who moved her head toward the girl in a manner which might have influenced the interpreter. Or, more likely, the pediatrician simply makes a body motion to underscore what he says. This points to one of the most vexing problems in this type of research, the difficulty of distinguishing what in an interpreter's behavior is kinesic rather than metakinesic.

Subtype c Head turning

Token I

Pediatrician: "He (Calvin) was following the story. As soon as she (Brenda) got to a certain point, he turns his head at her."

This child was extremely animatd and his head movement was very strong. This time when the pediatrician turns his head towards the front as usual, he does it with a tensing of the neck muscles and by 120 degrees rather than the usual 40 degrees. He also moves his whole body, similar to the model's behavior of total animation.

Type C (General impression)

Subtype a General animation

Token I

Pediatrician; "I think we also saw certain reactions from Brenda as the reader,

or as the story teller. As she is going you notice that she is sometimes very animate (pause) especially with the younger children. But as the age group is going up, and as the children, their response to her gave her cues or caused her to change her type of story telling. Especially with the older girls she was much less animate."

The model Brenda has large arm movements which are rendered by the pediatrician with an identical direction of movement but reduced in size. Like Brenda's, both of his hands are in motion, first moving rapidly, then gradually slowing down, and eventually folded on his lap, like the model's. The pediatrician tends to move both hands and his fingers throughout his conversations and there does not appear a direct relationship with his hand movements and those of the model. What the two movements have in common is their kinesic contour. They follow the same rhythmic pattern from fast movement to a standstill on the lap.

When the pediatrician mentions Brenda's more animate behavior with the younger children, his whole body behavior is more animate than when he talks about Brenda's reaction to the older children. There are more rapid movements of the torso and more of his fingers are moving in closer succession. We showed the videotape of the pediatrician when making the above quoted statements to two independent judges, one male and one female graduate student. When these judges asked what they were supposed to look for we told them they were to look for nothing in particular. After viewing the tape, we asked them whether they noticed any difference in body language and both said, almost in unison, that at the beginning of the picture the man was so much more animate than during the latter part. We then timed the duration of the two contrasting statements (which have been underlined in the complete quote above) with a stopwatch.

Especially with the younger children lasts 0.7 seconds. During this period the pediatrician made ten slight up and down movements of the right hand. This gives a ratio of 1.4.

Especially with the older girls lasts for 0.45 seconds and he exhibits only three up and down hand movements. This gives a ratio of 0.67. The ratio between the animate and the less animate behavior is slightly over 2:1 in favor of the more animate behavior.

Token II

Pediatrician: "He (Calvin) was very animate, he was moving his arms, his legs, looking around."

While saying this the pediatrician moves his arms and legs but not in the same wild fashion of the child. More precisely, the pediatrician has moderate movements of his arms and legs but quite violent movements of his head and shoulders. One gains the impression that he feels that an adult cannot quite move his arms in wide swings but that jerking shoulder movements are not dissimilar to those permitted in laughter.

It seems that here we observe a social taboo, similar to the possible sex taboo observed earlier.

Token III

Pediatrician: "I remember one girl in particular (Lisa) who seemed to sit with her hands neatly folded in her lap, perfect posture. "

While saying this the pediatrician does not at all imitate the particulars of the child's limited body motions, which are mainly restricted to soft head movements. Instead, his whole posture straightens, his shoulders are firm and his customary movements become smaller in size and slower in rhythm.

Type D (Indirect relation)

Subtype a Posture

Token I

Pediatrician: "The girls appear to have gone through, gone through a lot more trouble. They were neatly, neatly dressed. Sunday dress type of a clothing, while the boys seemed to be a little more casual in general. This may have some bearing on the reaction of the girls in the situation. It is immediate reinforcement that they should be doing this and nothing else."

The pediatrician straightens himself on the chair very slightly when he mentions the girls' formal attire. He then slumps somewhat in his posture when talking about the boys' casual clothing. Eventually, he adjusts again to his standard posture. It seems that he visualizes the girls' and the boys' contrasting posture while speaking about the way they are dressed. As a matter of fact, he verbally connects clothing style and postural behavior.

This connection presents a very difficult problem. A much larger corpus from the same individual would be needed to determine whether he had a mental image of the girls and boys which influenced his posture or whether he simply underscores what he says by the appropriate body language. When writing this paper, about

half a year after the taping had been done, we asked the pediatrician whether he recalled that particular instance and he told us that he remembered very vividly that he saw the girls and boys in his mind while talking about their attire.

Conclusion

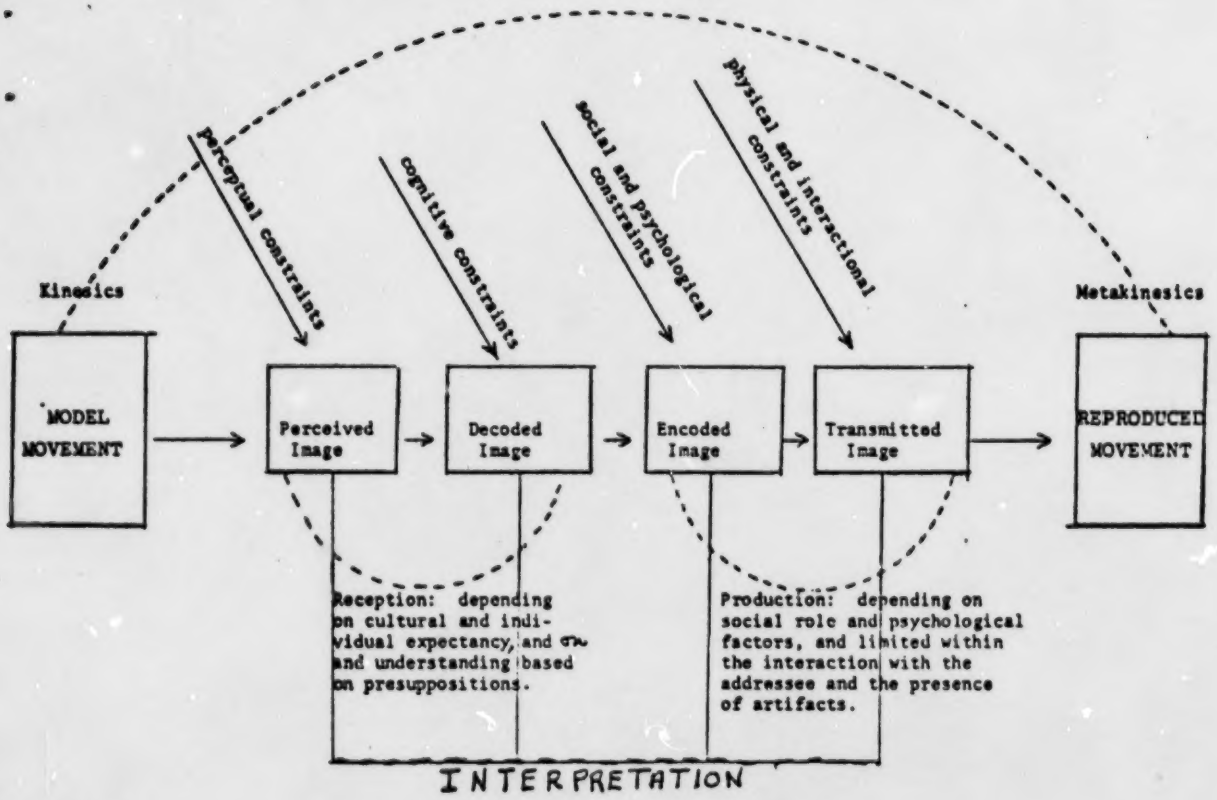
It may be premature to offer conclusions in a new area of research from a case study. Our conclusions are necessarily tentative but they may offer a beginning for hypothesis to be tested by a larger sample of data and increased subject population. We feel confident that the research design which emerged from the pilot study is valid. A final research project can easily be handled in a lab setting and does not require the expensive cost of research in a naturalistic situation. Metakinesic behavior did not seem inhibited by the formality of the setting.

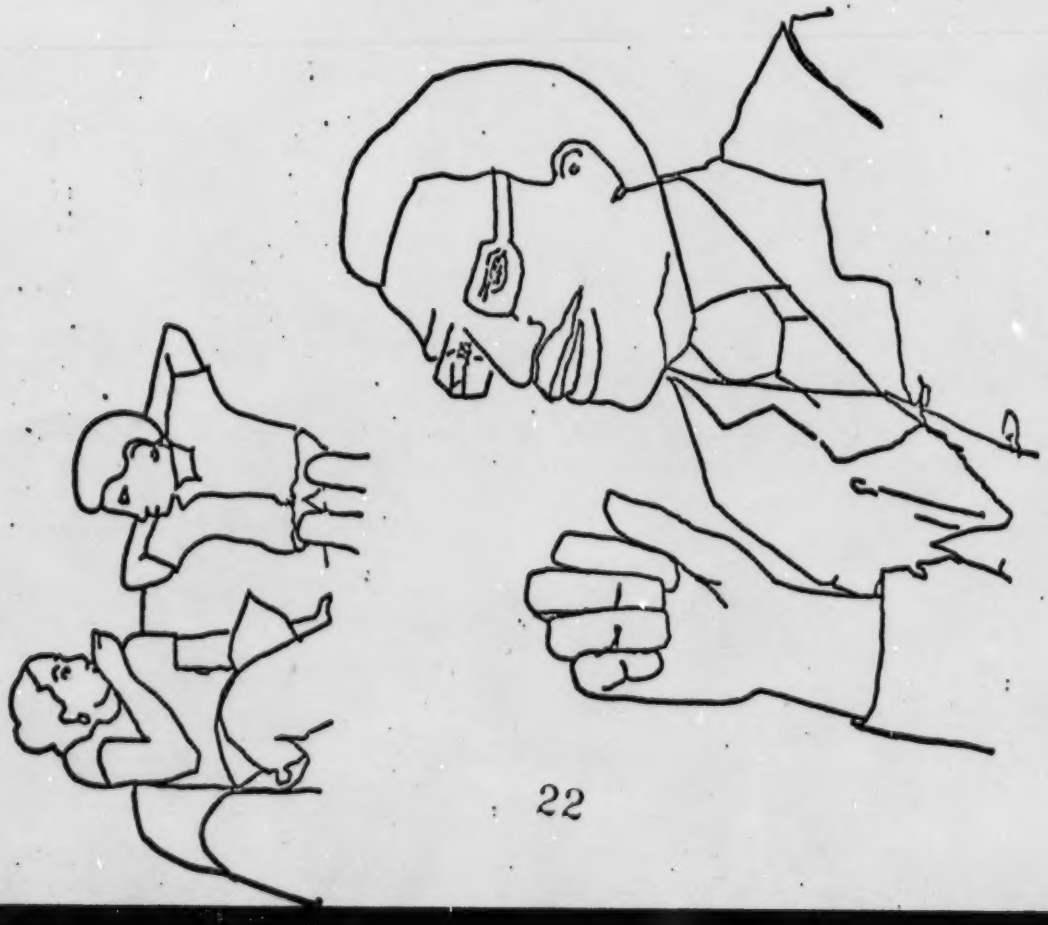
What emerged from the analysis of the data is a process of metakinesics programming (we use the term analogous to the common term speech programming) similar to Nida's (1964: p. 146-147) perception of the process of translating and his ethnolinguistic model of translation.

It appears that the image of kinesic behavior of the model is mediated through the general kinesic behavior of the interpreter before it is reproduced metakinesically. The mediation process involves the interpreter's rules of ethnokinesics (The term is analogous to ethnolinguistics) and the interactional situation of the moment, and possible constraints due to seating arrangements or physical objects on the interpreter which are not present, or differ, in the context of the model.

The question whether the kinesic behavior of the model is perceived and/or reproduces as a gestalt, similar to Nierenberg and Calero's (1971) gesture-clusters or whether individual body parts are recognized and/or reproduced remains to be investigated.

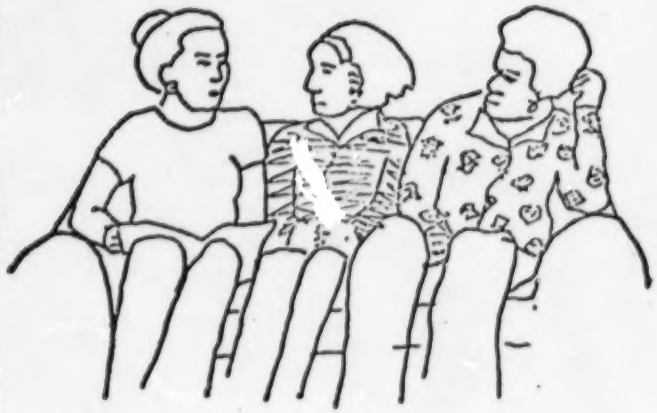
The Process of Metakinesic Programming


perceptual constraints
cognitive constraints
social and psychological constraints
physical and interactional constraints
Kinesics
Metakinesics
MODEL MOVEMENT
Perceived Image
Decoded Image
Encoded Image
Transmitted Image
REPRODUCED MOVEMENT
Reception: depending on cultural and individual expectancy, and and understanding based on presuppositions.
Production: depending on social role and psychological factors, and limited within the interaction with the addressee and the presence of artifacts.
INTERPRETATION



Type A Subtype b Hand to mouth

Type A Subtype d The earring



Type A Subtype c Hair touching

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